

**REMARKS**

The Office Action of May 30, 2006, and the Notice of Non-Compliant Amendment of September 18, 2006, have been received and reviewed.

Claims 1-38 are currently pending and under consideration in the above-referenced application, each standing rejected.

Reconsideration of the above-referenced application is respectfully requested.

**Supplemental Information Disclosure Statement**

Please note that a Supplemental Information Disclosure Statement was filed in the above-referenced application on September 23, 2002, but that the undersigned attorney has not yet received any indication that the references cited in the Supplemental Information Disclosure Statement have been considered in the above-referenced application. It is respectfully requested that the references cited in the Supplemental Information Disclosure Statement of September 23, 2002, be considered and made of record in the above-referenced application and that an initialed copy of the Form PTO/SB/08A that accompanied that Supplemental Information Disclosure Statement be returned to the undersigned attorney as evidence of such consideration.

**Rejections under 35 U.S.C. § 112, Second Paragraph**

Claims 24-30, 36, and 37 have been rejected under 35 U.S.C. § 112, second paragraph, for reciting subject matter that is purportedly indefinite. Specifically, it has been asserted that the structure that has been recited with respect to the respiratory flow component of these claims, which is an element that is not positively set forth in the claims, is ambiguous.

The standard that applies to these rejections is: would one of ordinary skill in the art, in view of the description that has been provided, understand the scope of the subject matter recited in claims 24-30, 36, and 37? M.P.E.P. § 2173.02.

Claim 24 has been revised to remove reference to assembly with a respiratory flow component. One of ordinary skill in the art would readily understand from the language of claims 24-30 that all remaining reference in claims 24-30 to the features of a respiratory flow

component merely provide context and to define the elements that have been positively set forth in claims 24-30. In this regard, the elements to which objections have been raised clearly convey the scope and meaning of each of claims 24-30 to one of ordinary skill in the art.

Independent claim 36 is drawn to a transducer for use with a respiratory flow component that includes a luminescable composition. Reference to features of the respiratory flow component, including the luminescable composition thereof, is useful for providing one of ordinary skill in the art with an understanding of one or more elements of the transducer.

As the objected-to language of each of claims 24-30, 36, and 37 provides one of ordinary skill in the art with a clear understanding of the scope of each of these claims, it is respectfully submitted that each of these claims complies with the definiteness requirement of 35 U.S.C. § 112, second paragraph, it is respectfully submitted that the 35 U.S.C. § 112, second paragraph rejections of claims 24-20, 36, and 37 should be withdrawn, and each of these claims should be allowed.

#### **Rejections under 35 U.S.C. § 103(a)**

Claims 1-38 stand rejected under 35 U.S.C. § 103(a).

The standard for establishing and maintaining a rejection under 35 U.S.C. § 103(a) is set forth in M.P.E.P. § 706.02(j), which provides:

To establish a *prima facie* case of obviousness, three basic criteria must be met. First, there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or combine reference teachings. Second, there must be a reasonable expectation of success. Finally, the prior art reference (or references when combined) must teach or suggest all the claim limitations. The teaching or suggestion to make the claimed combination and the reasonable expectation of success must both be found in the prior art, and not based on applicant's disclosure. *In re Vaeck*, 947 F.2d 488, 20 USPQ2d 1438 (Fed. Cir. 1991).

#### **Stanley in View of Knodle**

Claims 1-10, 13-15, and 17-37 stand rejected under 35 U.S.C. § 103(a) for reciting subject matter which is assertedly unpatentable over the subject matter taught in U.S.

Patent 3,725,658 to Stanley et al. (hereinafter “Stanley”), in view of teachings from U.S.

Patent 4,914,720 to Knodle et al. (hereinafter “Knodle”).

Stanley teaches an integral side stream monitoring apparatus that employ luminescence quenching technology for detecting changes in oxygen present in diverted respiratory samples.

Knodle teaches an infrared carbon dioxide cuvette that is configured for placement directly along a breathing tube. Accordingly, the cuvette of Knodle is part of a so-called “mainstream” sensor. A complementarily configured transducer of that sensor is configured for assembly with and disassembly from the cuvette.

It is respectfully submitted that there are several reasons that a *prima facie* case of obviousness has not been established against any of claims 1-10, 13-15, or 17-37.

First, one of ordinary skill in the art wouldn't have had the benefit of hindsight that the claims of the above-referenced application have provided to the Office. Without such knowledge, one of ordinary skill in the art wouldn't have been motivated to combine the teachings of Stanley and Knodle in the manner that has been asserted.

In particular, the claims of the above-referenced application are directed to transducers. As the side stream monitoring apparatus of Stanley does not include a transducer, the Office has relied upon Knodle for its disclosure of a multi-component respiratory sensor that includes a transducer that is configured for assembly with a “mainstream” cuvette. It is respectfully submitted that one of ordinary skill in the art wouldn't have been motivated to add complexity to the integral side stream monitoring apparatus of Stanley by incorporating various components thereof into a separate transducer and cuvette. It is further submitted that one of ordinary skill in the art would have understood the inventive effort required to adapt a luminescence quenching type sensor from the context of side stream monitoring, in which very small respiratory samples are used, to a mainstream device, in which monitoring is conducted on a much large sample – all respiratory gases.

Furthermore, one of ordinary skill in the art wouldn't have been motivated to combine teachings from a luminescence quenching apparatus of the type taught in Stanley with teachings that pertain to an infrared sensing device, such as that taught in Knodle. This is because the sample container of the luminescence quenching apparatus of Stanley is coated with a

luminescable material, which one of ordinary skill in the art would expect to disrupt transmission radiation through the tube, while the infrared sensing device of Knodle requires an unobstructed optical path through the sample container.

Second, one of ordinary skill in the art wouldn't have had any reason to expect that the purported combination of teachings from Stanley and Knodle would have been successful, particularly when the teachings of these references are considered in their entireties, as required by M.P.E.P. § 2141.02. For example, the luminescent material-coated tube, sensor, and detector of Stanley are part of an integral unit; thus, there would be no reason to couple the transducer of Knodle to the apparatus of Stanley. Even assuming, for the sake of argument, that the transducer of Knodle could be coupled to the apparatus of Stanley, the wavelengths that are generated and detected by the source and detector of Knodle's transducer would not excite or detect fluorescence from the luminescent material within the apparatus that is taught in Stanley. Further, the presence of luminescable material on the surfaces of the tube would likely interfere with the infrared transmission that is required to obtain respiratory carbon dioxide measurements in accordance with the teachings of Knodle. Therefore, one of ordinary skill in the art would not have any reason to expect that features from the mainstream infrared sensor taught in Knodle could be incorporated into the side stream luminescence quenching sensor taught in Stanley.

Third, both Stanley and Knodle lack any teaching or suggestion of each and every element of several claims of the above-referenced application.

Neither Stanley nor Knodle teaches or suggests a transducer with a detector that is configured to communicate with a processor configured to increase a signal-to-noise ratio of a signal indicative of an intensity of at least one wavelength of electromagnetic radiation emitted by a luminescable composition, as required by claim 3. The teachings of Stanley regarding signal-to-noise ratios are limited to the recognition that a high ratio is desirable.

Stanley and Knodle also lack any teaching or suggestion of a transducer that includes a detector that is configured to communicate with a processor that operates under different processing protocols depending upon the monitored oxygen concentration, as recited in claim 5.

Claims 6 and 7 are directed to allowable subject matter since Stanley and Knodle both lack any teaching or suggestion of a transducer with a detector that comprises a photodiode or a transducer that comprises a PIN silicon photodiode, respectively.

With respect to the subject matter recited in claim 17, neither Stanley nor Knodle teaches or suggests a transducer with a second radiation source that emits at least a calibration wavelength of electromagnetic radiation. The teachings of Stanley are instead limited to calibration of a sensor with gas mixtures including known concentrations of oxygen.

Claim 18, which depends from claim 17, is also allowable since neither Stanley nor Knodle includes any teaching or suggestion of a transducer with a second radiation source that emits calibration radiation that will not cause a luminescable material of a sensor that configured for assembly with the transducer to luminesce.

With respect to the subject matter recited in claims 25-30, even assuming, *arguendo*, that Stanley suggests the desirability of including a temperature control component in a transducer, neither Stanley nor Knodle teaches or suggests a transducer with a heater component that is configured to contact a thermal capacitor upon assembly of the transducer with a respiratory flow component, as recited in claim 25; a transducer with a temperature control component exposed therethrough, as recited in claim 26; a transducer with a heater component that is configured to be biased against a thermal capacitor of a respiratory flow component, as recited in claim 27; a transducer with a heater component that includes a thick film heater, as recited in claim 28; or a transducer with a temperature sensor that senses a temperature of a heater component, a capacitor, or a luminescable composition, as recited in claim 30.

Independent claim 36 is allowable since neither Stanley nor Knodle teaches or suggests a transducer with a detector that is substantially stable for about eight hours or more.

Claim 37, which is allowable for depending from claim 36, is also allowable because Stanley and Knodle both lack any teaching or suggestion of a transducer with a detector that “has a stability of about  $\pm 2$  torr over eight hours at an atmospheric oxygen concentration.”

It is, therefore, respectfully submitted that a *prima facie* case of obviousness has not been established against any of claims 1-10, 13-15, and 17-35. Therefore, under 35 U.S.C. § 103(a),

the subject matter recited in each of claims 1-10, 13-15, and 17-35 is allowable over the subject matter taught in Stanley and Knodle.

Stanley, Knodle, and Yafuso

Claims 11 and 12 are rejected under 35 U.S.C. § 103(a) for being drawn to subject matter that is allegedly unpatentable over the teachings of Stanley, in view of teachings from Knodle and, further, in view of the subject matter taught in U.S. Patent 4,849,172 to Yafuso et al. (hereinafter “Yafuso”).

Yafuso does not remedy the aforementioned deficiencies of Stanley and Knodle. Therefore, claims 11 and 12 are both allowable, among other reasons, for respectively depending directly and indirectly from claim 1, which is allowable.

Stanley, Knodle, and Hauenstein

Claim 16 has been rejected under 35 U.S.C. § 103(a) for being drawn to subject matter which is assertedly unpatentable over that taught in Stanley, in view of teachings from Knodle and, further, in view of the teachings of U.S. Patent 4,861,727 to Hauenstein et al. (hereinafter “Hauenstein”).

Hauenstein does not remedy the aforementioned deficiencies of Stanley and Knodle. Therefore, claim 16 is allowable, among other reasons, for depending directly from claim 1, which is allowable.

Stanley, Knodle, and Alcala

Claim 38 stands rejected under 35 U.S.C. § 103(a) for being reciting subject matter that is allegedly unpatentable over the teachings of Stanley, in view of teachings from Knodle and, further, in view of the teachings of U.S. Patent 5,315,993 to Alcala et al. (hereinafter “Alcala”).

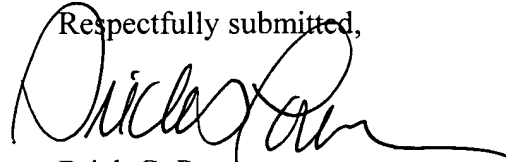
Claim 38 is allowable, among other reasons, because Alcala does not remedy the aforementioned deficiencies of Stanley and Knodle in supporting a *prima facie* case of obviousness.

It is respectfully requested that the 35 U.S.C. § 103(a) rejections of claims 1-38 be withdrawn, and that each of these claims be allowed.

### CONCLUSION

It is respectfully submitted that each of claims 1-38 is allowable. An early notice of the allowability of each of these claims is respectfully solicited, as is an indication that the above-referenced application has been passed for issuance. If any issues preventing allowance of the above-referenced application remain which might be resolved by way of a telephone conference, the Office is kindly invited to contact the undersigned attorney.

Respectfully submitted,



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